

## SAND CONTROL PRODUCTS

### Punched Screen

#### Description

Punched Screen is a slip on style jacket which is slid over the perforated base pipe and secured at each end via welds. Punched screen is unique in that inflow occurs into the liner in an axial vs a radial path at a 90 degree angle to the screen O.D.

304L or 316L are the most common metal types utilized but alternates can be provided.

Screens are available with multiple slot geometries and densities with open flow area ranging from 1.5%-8%.

Screens are typically provided in lengths ranging from 3m-9m but are available in any length or combination of lengths to fit pipe configuration desired.

Available screen gauges are 0.006" (150 Micron) - 0.040" (1016 Micron)

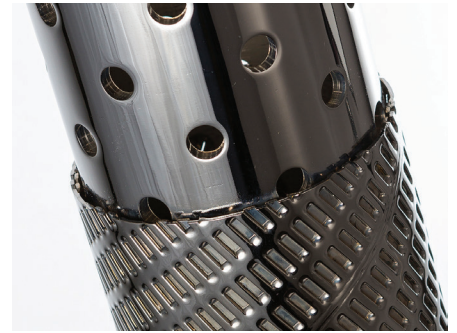
Punched Screen is a cost effective liner technology which has proven to optimize SAGD operations in uniform reservoirs by ensuring low draw downs for the lifetime of the well.

#### Features and Benefits

- Multiple slot geometries available
- 304L/316L Stainless Steel
- High Open Flow Area 1.5%-8% based on screen gauge and punch geometry

#### Applications

- Thermal SAGD/CSS horizontal open hole in uniform reservoirs



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#### Technical Data

| Base Pipe      |        | Holes Per foot | Holes Per meter | Hole Size inches | Hole Open Area sq.in./ft | Screen         |       | NU Coupling    |        | EU Coupling |        |
|----------------|--------|----------------|-----------------|------------------|--------------------------|----------------|-------|----------------|--------|-------------|--------|
| Outer Diameter |        |                |                 |                  |                          | Outer Diameter |       | Outer Diameter |        |             |        |
| inches         | mm     |                |                 |                  |                          | inches         | mm    | inches         | mm     | inches      | mm     |
| 1.900          | 48.26  | 84             | 275.6           | 3/8              | 9.3                      | 2.17           | 55.0  | 2.200          | 55.88  | 2.500       | 63.50  |
| 2.375          | 60.33  | 96             | 315.0           | 3/8              | 10.6                     | 2.70           | 68.5  | 2.875          | 73.03  | 3.063       | 77.80  |
| 2.875          | 73.03  | 60             | 196.9           | 1/2              | 11.8                     | 3.27           | 83.0  | 3.500          | 88.90  | 3.668       | 93.17  |
| 3.500          | 88.90  | 72             | 236.2           | 1/2              | 14.1                     | 3.90           | 99.0  | 4.250          | 107.95 | 4.500       | 114.30 |
| 4.000          | 101.60 | 84             | 275.6           | 1/2              | 16.5                     | 4.35           | 110.5 | 4.750          | 120.65 | 5.000       | 127.00 |
| 4.500          | 114.30 | 84             | 275.6           | 1/2              | 16.5                     | 4.92           | 125.0 | 5.200          | 132.08 | 5.563       | 141.30 |

| Base Pipe      |        | Holes Per foot | Holes Per meter | Hole Size inches | Hole Open Area sq.in./ft | Screen         |       | Coupling       |        |
|----------------|--------|----------------|-----------------|------------------|--------------------------|----------------|-------|----------------|--------|
| Outer Diameter |        |                |                 |                  |                          | Outer Diameter |       | Outer Diameter |        |
| inches         | mm     |                |                 |                  |                          | inches         | mm    | inches         | mm     |
| 4.500          | 114.30 | 84             | 275.6           | 1/2              | 16.5                     | 4.92           | 125.0 | 5.000          | 127.00 |
| 5.000          | 127.00 | 96             | 315.0           | 1/2              | 18.9                     | 5.39           | 137.0 | 5.563          | 141.30 |
| 5.500          | 139.70 | 96             | 315.0           | 1/2              | 18.9                     | 5.91           | 150.0 | 6.050          | 153.67 |
| 6.625          | 168.28 | 120            | 393.7           | 1/2              | 23.6                     | 7.01           | 178.0 | 7.390          | 187.71 |
| 7.000          | 177.80 | 132            | 433.1           | 1/2              | 25.9                     | 7.40           | 188.0 | 7.656          | 194.46 |
| 7.625          | 193.68 | 144            | 472.5           | 1/2              | 28.3                     | 8.07           | 205.0 | 8.500          | 215.90 |
| 8.625          | 219.08 | 156            | 511.8           | 1/2              | 30.6                     | 9.06           | 230.0 | 9.625          | 244.48 |